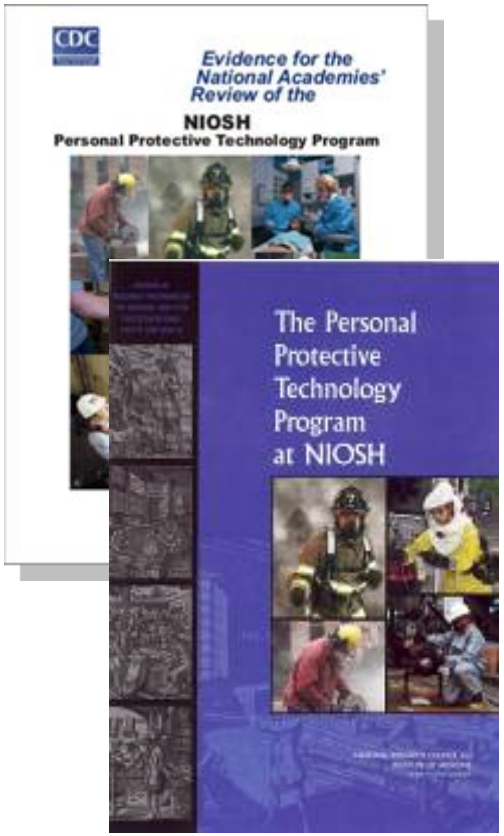
National Personal Protective Technology Laboratory

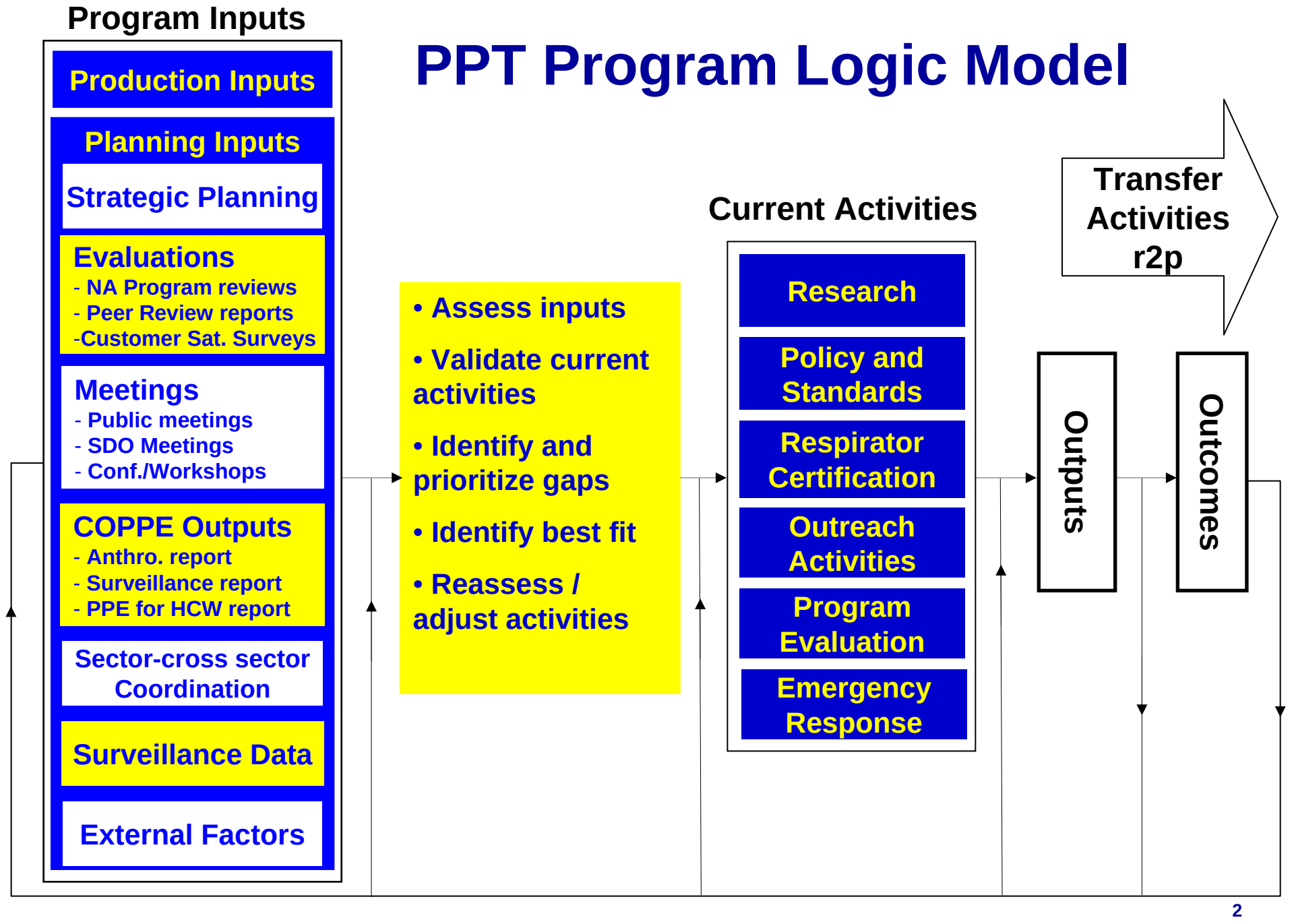
NIOSH PPT Program Evaluation and Surveillance



Maryann D'Alessandro, Ph.D.
NPPTL Associate Director for Science
PPT Program Coordinator

PPT Stakeholder Meeting
March 3, 2009

PPT Program Logic Model



Overview
Scientific Inputs to the PPT Program

Enhance the quality and credibility of PPT Program contributions to NIOSH science by maximizing the quality inputs to the PPT Program

- National Academies COPPE
- Conducting Scientific Evaluations of Activities
  - National Academies Program Evaluation
  - National Academies Scientific Reviews
  - Scientific Information Product Peer Review
  - Scientific Proposal and Protocol Peer Reviews
  - Action Planning Assessments
- PPT Surveillance

PPT Planning Input - COPPE Background

Established in 2005

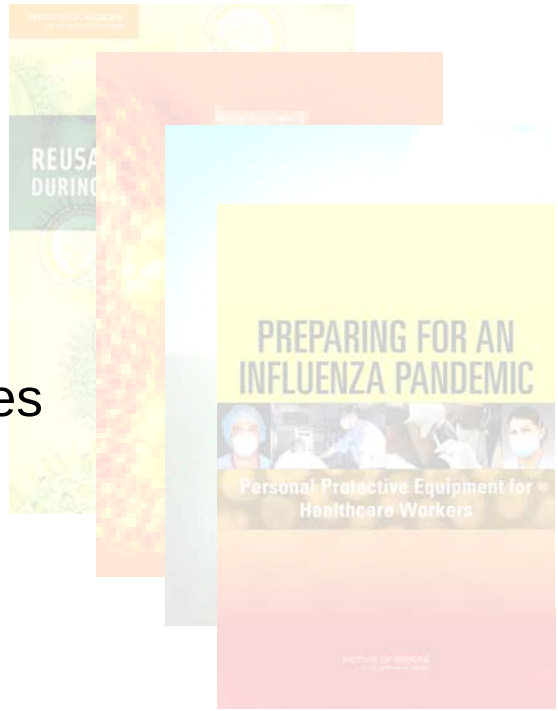
- First meeting Nov 2005
- 2-3 open meetings conducted annually
  - NPPTL Listserv announcement posted to announce meetings
  - NPPTL Listserv announces availability of reports

COPPE Charge

- Forum for discussing scientific and technical PPE/PPT issues relevant to PPT Program mission
- Liaison and oversight to ad hoc study committees requested by NIOSH and approved by the IOM and the NA

COPPE Outputs

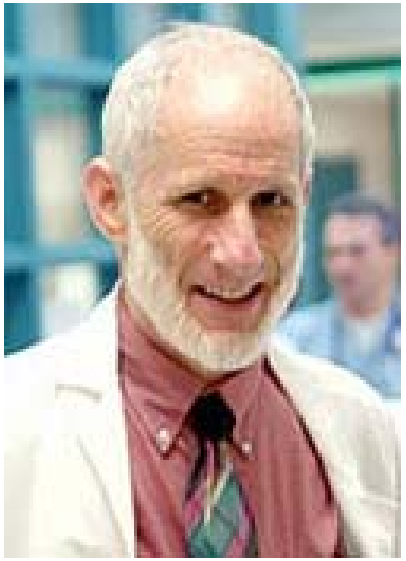
- 2 Evaluations conducted
- 1 Workshop study
- 1 HHS Study supported
- 1 PPT Program study conducted



THE NATIONAL ACADEMIES
Advisers to the Nation on Science, Engineering, and Medicine

Committee on Personal Protective Equipment for Workplace Safety and Health (COPPE)

Lewis R. Goldfrank, M.D. (Chair)



Lewis R. Goldfrank, M.D. **has worked at Bellevue Hospital Center and New York University (NYU) Medical Center for the last quarter century. He is currently the first chairman and professor of the newly established academic Department of Emergency Medicine at NYU, where his efforts have led to the development of the university's emergency medicine and medical toxicology residencies. Dr. Goldfrank is also the medical director of the New York City Health Department's Poison Center. His career has been spent working in the public hospitals of New York City, emphasizing the role of emergency medicine in improving access to care, public health, public policy, and medical humanism. He has assisted in numerous projects in South America, Asia, and Europe in the advancement of emergency medicine and medical toxicology, emphasizing his interests in the improvement of global health. Dr. Goldfrank recently has served on three committees (as chair for two of them) dealing with issues of terrorism: civilian medical response to chemical and biological terrorism; metropolitan medical response teams and preparedness for terrorism; and the psychological consequences of terrorism. Educated at Clark University, Johns Hopkins School of Medicine, and the University of Brussels, Belgium, he graduated from the University of Brussels Medical School in 1970. He completed his residency in Internal Medicine at Montefiore Hospital and Medical Center in 1973. He is a member of the Institute of Medicine.**

Institute of Medicine

Standing Committee on Personal Protective Equipment for Workplace Safety and Health

Lewis Goldfrank, M.D., Chair

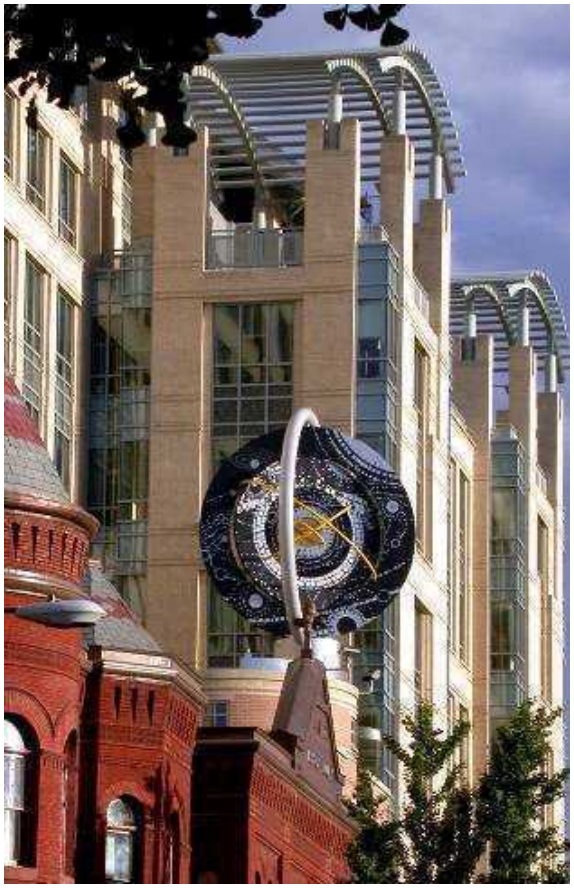
INSTITUTE OF MEDICINE
OF THE NATIONAL ACADEMIES

Institute of Medicine

- Established in 1970, under 1863 Congressional charter of the National Academy of Sciences
- Honorary membership organization
- Provides independent advice to the government and other sponsors

- Work through:
- Ad hoc study committees
- Standing committees
- Forums and roundtables

- Value Added:
- Balanced, expert committees
- Objective and independent
- Rigorous peer review process
- Open to public observation and input
- Evidence-based consensus recommendations
- Unbiased advice



Committee on Personal Protective Equipment for Workplace Safety and Health

TASK

- Serve as a forum for discussion of scientific and technical issues relevant to the development, certification, deployment, and use of personal protective equipment, standards, and related systems to ensure workplace safety and health. Provide liaison and oversight to ad hoc study committees of the IOM and National Research Council

Committee Members

- **Lewis R. Goldfrank, M.D. (*chair),* New York University School of Medicine**
- **Charles Austin, M.S, Sheet Metal Occupational Health Institute Trust**
- **Linda Hawes Clever, M.D., California Pacific Medical Center**
- **Howard J. Cohen, Ph.D., Consultant**
- **Robert Cohen, M.D., Stroger Hospital of Cook County**
- **Robyn R. Gershon, Dr.P.H., Columbia University**
- **Sundaresan Jayaraman, Ph.D., Georgia Institute of Technology**
- **Melissa McDiarmid, M.D., M.P.H., University of Maryland School of Medicine**
- **Jimmy Perkins, Ph.D., University of Texas Health Science Center**
- **James Platner, Ph.D., Center to Protect Workers' Rights**
- **David Prezant, M.D., New York City Fire Department**
- **Knut Ringen. Dr.P.H., Consultant**
- **Bonnie Rogers, Dr.P.H., M.P.H., University of North Carolina, Chapel Hill**
- **Jeffrey O. Stull, M.Sc., International Personnel Protection, Inc.**
- **James Tacci, M.D., Xerox Corporation**
- **Gary C. Tepper, Ph.D., Virginia Commonwealth University**

Meeting Topics

- PPT standards development
- Tour of NPPTL Lab
- Surveillance on use of PPT
- Healthcare workers, pandemic influenza, and PPE
- Systems approach to PPT development and evaluation
- Cost-effectiveness research
- Organizational management approaches

Related IOM/NRC Reports

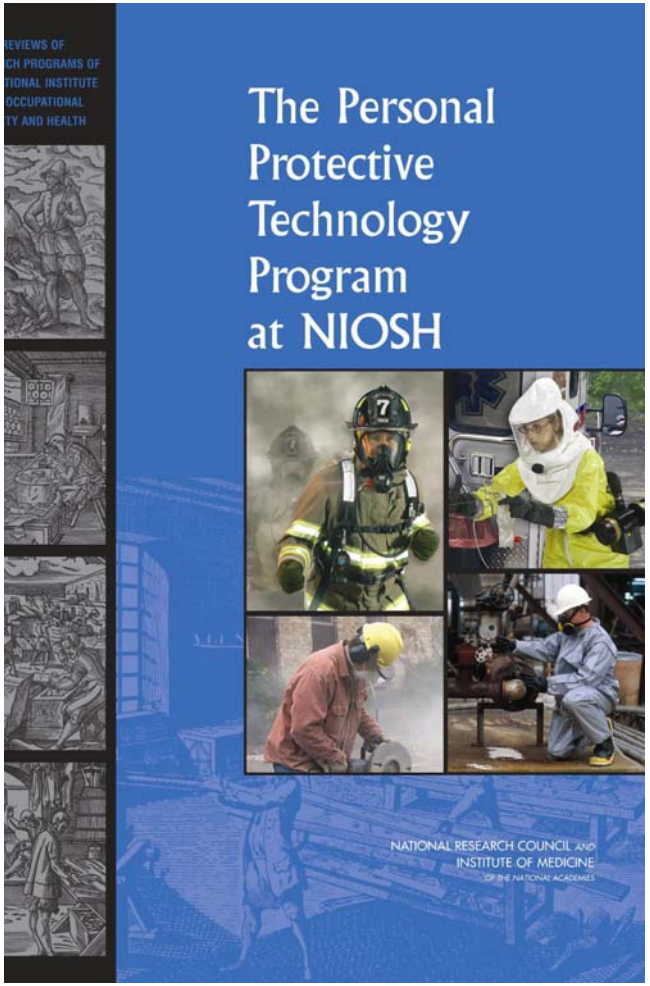
- *Measuring Respirator Use in the Workplace*
- *Assessment of the NIOSH Head-and-Face Anthropometric Survey of U.S. Respirator Users*
- *Preparing for an Influenza Pandemic: Personal Protective Equipment for Healthcare Workers*
- *The Personal Protective Technology Program at NIOSH*

- **Committee on Personal Protective Equipment**
  - **for Workplace Safety and Health**

- **For more information:**
- http://www.iom.edu/workplacesafety

- Reports available through
- National Academies Press
  - www.nap.edu

PPT Program Evaluation



Who reviewed the PPT Program?

E. John Gallagher (Chair), Albert Einstein College of Medicine, Bronx, NY
Roger L. Barker, North Carolina State University, Raleigh, NC
Howard J. Cohen, University of New Haven, CT
Janice Comer-Bradley, International Safety Equipment Association, Arlington, VA
Elizabeth A. Corley, Arizona State University, Phoenix, AZ
Richard M. Duffy, International Association of Fire Fighters, Washington, DC
James S. Johnson, JSJ and Associates, Pleasanton, CA
James M. McCullough, SRI International, Arlington, VA
Jimmy Perkins, University of Texas Health Science Center, San Antonio, TX
David Prezant, Albert Einstein College of Medicine; FDNY, Brooklyn, NY
Knut Ringen, Independent Consultant, Seattle, WA
Emanuel P. Rivers, Henry Ford Hospital, Detroit, MI
Joseph J. Schwerha, University of Pittsburgh, Pittsburgh, PA
Anugrah Shaw, University of Maryland, Eastern Shore, MD
Tonya Smith-Jackson, Virginia Polytechnic Institute and State University, Blacksburg, VA

Framework Committee Liaison
Susan Cozzens, Georgia Institute of Technology, Atlanta, GA
Board on Health Sciences Policy Liaison
Martha Hill, Johns Hopkins University, Baltimore, MD

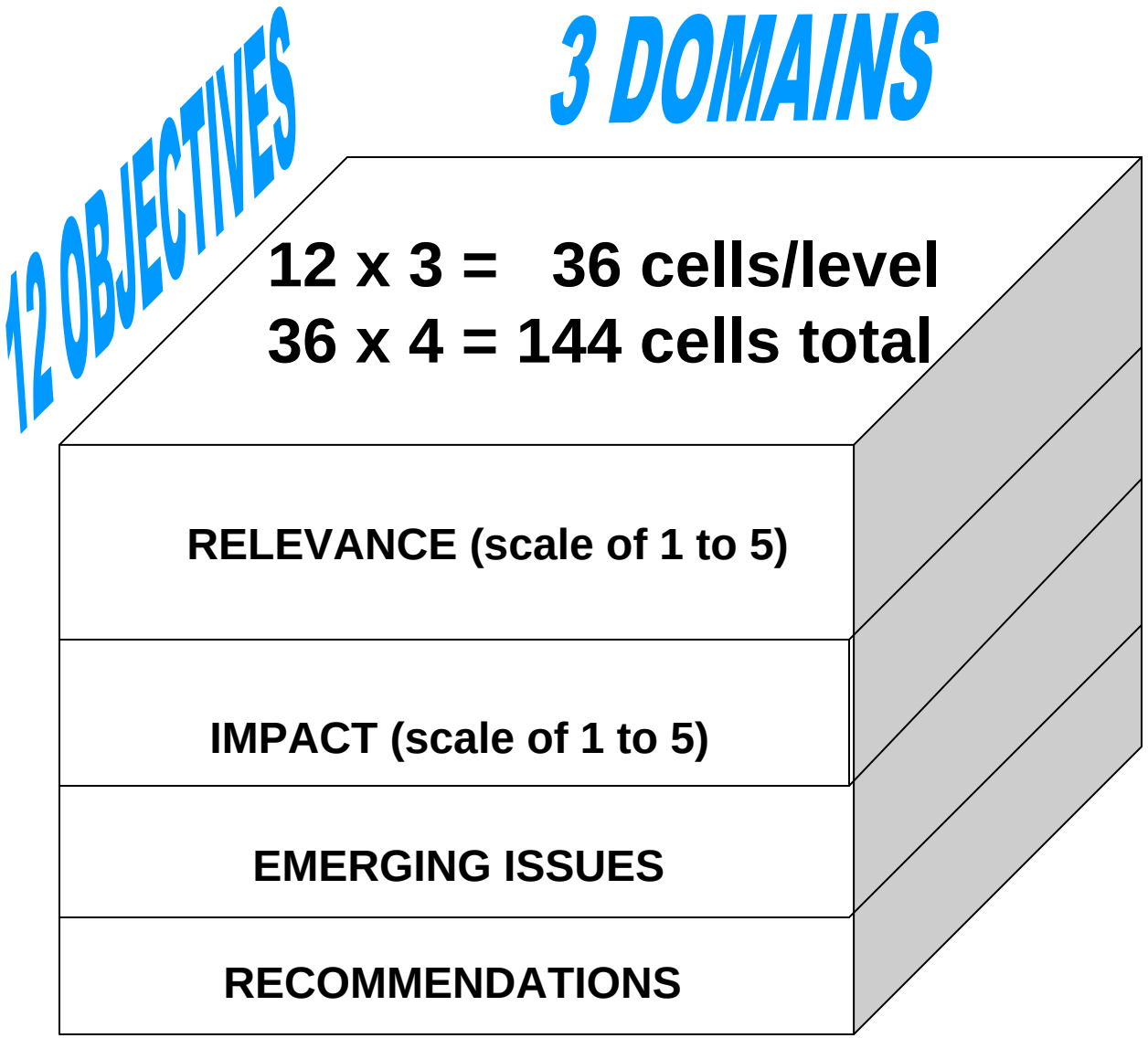
From PPT Evaluation Presentation – June 25, 2008

What was reviewed?

PPT GOALS & OBJECTIVES	PPT DOMAINS		
	Research	Policy & Standards	Respiratory Certification
1. INHALATION			
1.1. Maintain national inventory of respirators			
1.2. CBRN			
1.3. Mine escape respirators			
1.4. Anthropometrics			
1.5. Viral transmission/pandemic preparedness			
1.6. Nanotechnology			
1.7. ESLI			
1.8. Respirator use in the workplace			
2. DERMAL			
2.1. Chemical barrier protective clothing			
2.2. Emergency responder protective clothing			
2.3. Ergonomics of protective ensembles			
3. INJURY			
3.1. Warning devices for fire services			

From PPT Evaluation Chair Framework Committee Presentation – Nov 24, 2008

How was the Program reviewed?



From PPT Evaluation Chair Framework Committee Presentation – Nov 24, 2008

Overall Assessment of Relevance and Impact

Relevance Score= 4

PPT program is working in priority areas and is engaged in transferring its research into improved products and processes.

Impact Score= 4

The PPT program has made some meaningful contributions to both intermediate outcomes and, to a lesser extent, end outcomes.

National Academies' Recommendations

Recommendation 1: Implement and Sustain a Comprehensive National PPT Program

Recommendation 2: Establish PPT Research Centers of Excellence and Increase Extramural PPT Research

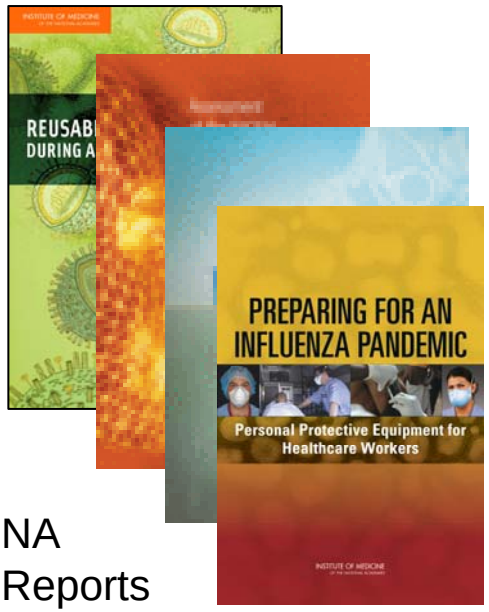
Recommendation 3: Enhance the Respirator Certification Process

Recommendation 4: Increase Research on the Use and Usability of PPT

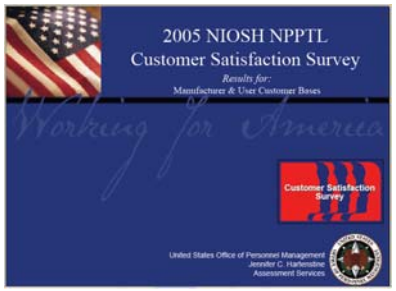
Recommendation 5: Assess PPT Use and Effectiveness in the Workplace Using a Life-Cycle Approach

Where do we go from here….

PPT Program Approach to Address the Recommendations

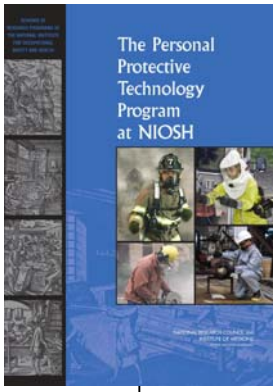


NA Reports



Customer Satisfaction Surveys

PPT Program Inputs



PPT Program Action Planning

Solicit Public Comment

Submit to NIOSH BSC

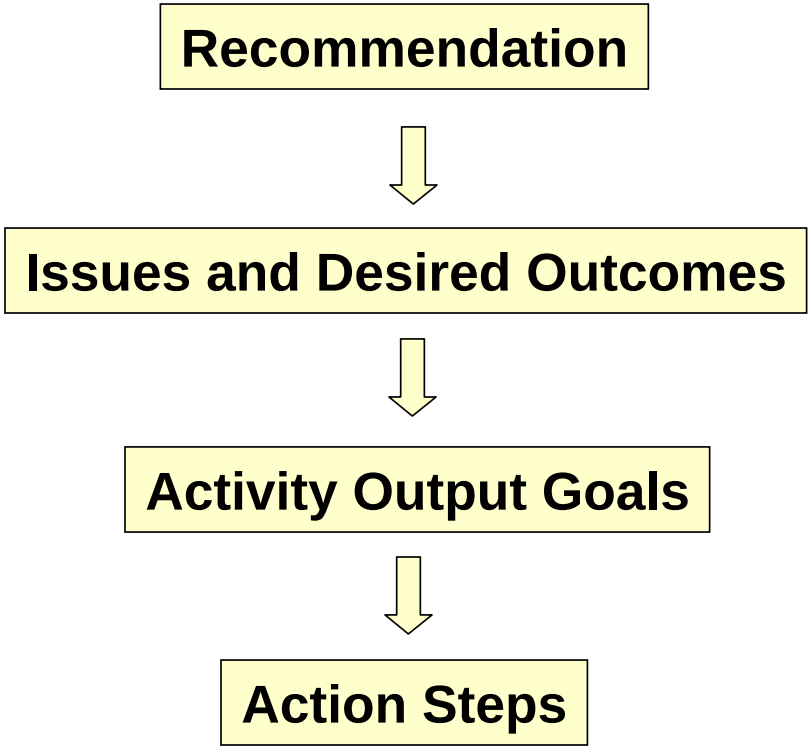
Implement Action Plan

Domestic Chemical Defense Implementation Plan (HSPD-22)

Mine Improvement and New Emergency Response Act of 2006 (MINER Act)

External Inputs

NIOSH PPT Program established a hierarchy to address the National Academies' recommendations



The hierarchy aligns with the NIOSH Program Portfolio planning and provides a comprehensive approach for moving the program forward.

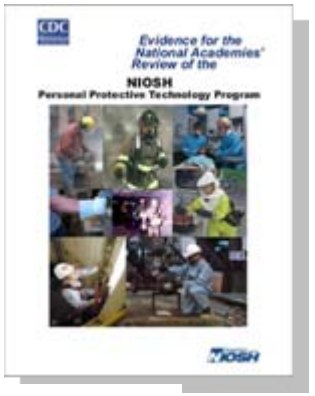
PPT Interpretation of the Recommendations

Each NA recommendation with its associated issues is addressed separately.

1. **Comprehensive National PPT Program**
2. **Establish PPT Research Priorities and Expand the Extramural Program**
3. **Enhanced Respirator Certification Program**
4. **Research on use and usability of PPE**
5. **Assess PPT use and effectiveness using a lifecycle approach**

Recommendation 1: Implement and sustain a comprehensive National Personal Protective Technology program

Issue 1.1: Organize research across all types of PPT and across all occupations and workplaces



Issue 1.2: Participate in policy development and standards setting across all types of PPT

Issue 1.3: Oversee certification of all PPT, including assessment of certification mechanisms

ANSI American National Standards Institute

ASTM INTERNATIONAL Standards Worldwide

Issue 1.4: Promote the development, standards, and certification of integrated PPT components and ensembles

NFPA®

NIOSH

Approximately $12 M budget for PPT on FY09

Determine what emerging issues should be emphasized

Current PPT Program Focus

- CBRN Issues
- Pandemic Influenza Preparedness
- Mine escape
- Nanotechnology

Emerging Issues raised by Committee

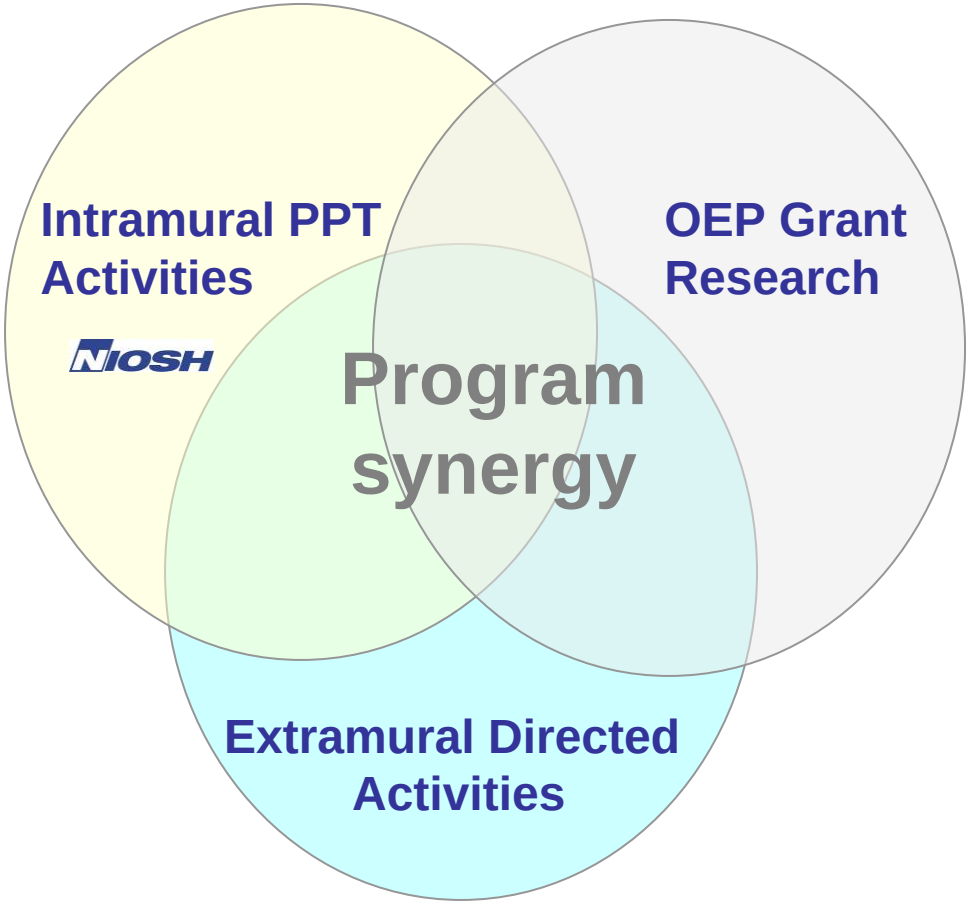
- New materials technology, including “no-fit” respirators
- PPT ensembles and seamless integration of multiple PPT components
- Usability, comfort, ergonomics, and human factors which determine whether or not the PPE is worn by the worker
- Enhancing the culture of workplace safety through worker education, training, and understanding of hazardous exposure risk to health

Other emerging issues

Recommendation 2: Establish PPT Research Priorities and Expand the Extramural Program

Issue 2.1: Coordinate intramural and extramural research activities

Issue 2.2: Expand the extramural research program



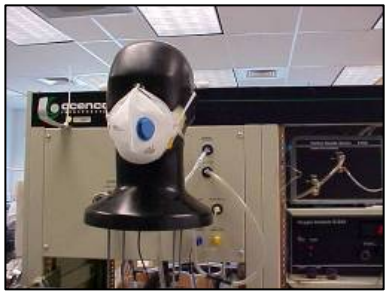
Approximately 30 Extramural grants emphasize PPT

Recommendation 3: Enhance the Respirator Certification Program

Issue 3.1: Explore ways to expedite revision of the respirator certification regulations

Issue 3.2: Assess the feasibility of updating certification fees

Issue 3.3: Examine the possibility of registering the purchase of NIOSH-certified respirators



Issue 3.4: Explore the expansion of the product audit program

Issue 3.5: Consider expanding the site audit program

Issue 3.6: Explore approaches for disseminating respirator certification test results data

Approximately $6.4 M budget for PPT on FY09

Recommendation 4: Increase Research on the Use and Usability of PPT

Issue 4.1: Define Barriers to and Facilitators of PPT Use

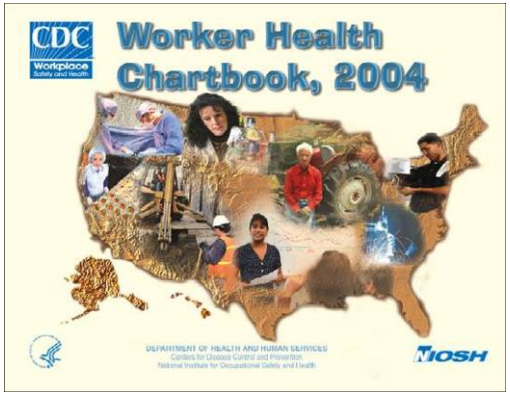
Issue 4.2: Develop innovative PPT designs and test methods to improve comfort, fit, and usability

Issue 4.3: Develop systems integration strategies for PPT and components

Approximately $1.3 M budget for PPT on FY09

Recommendation 5: Assess PPT Use and Effectiveness in the Workplace Using a Life-Cycle Approach

Issue 5.1: Establish a comprehensive surveillance program



Issue 5.2: Conduct random periodic field testing of PPE

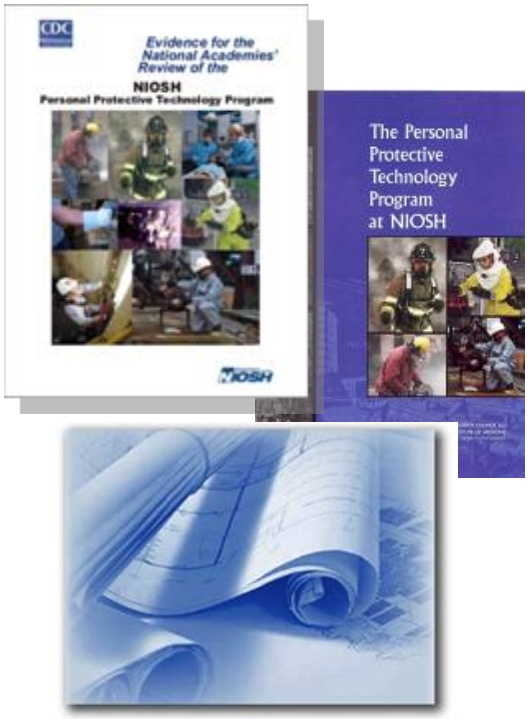
Approximately $1 M budget for PPT on FY09

Moving forward….

Image used with permission
from Carmen Hurt, Mar 2, 2009

Walking the walk...

Develop the Plan



Build the Foundation

Implement the Plan

State of PPT Program Surveillance

PPE required in many settings

- PPT is a NIOSH identified cross sector impacting all sectors
- Workplace programs required
- Lack of educational programs

Systematic collection of PPT data needed to inform PPT Program

Need to link exposure, PPE use, and outcome data in a meaningful way

Organization/Staffing/Funding

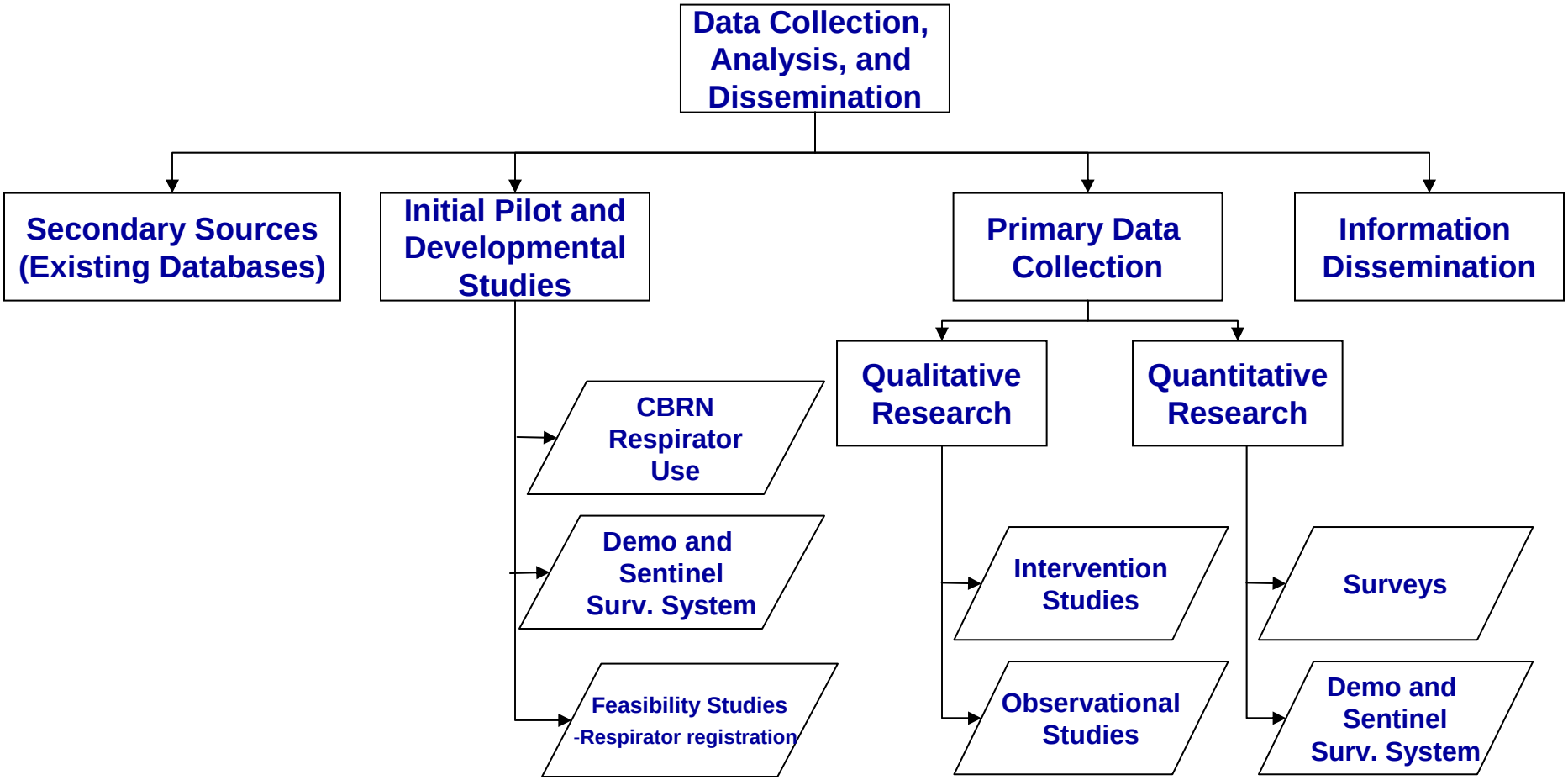
Surveillance supported by multiple divisions & locations within NIOSH

NPPTL is the lead division for PPT Surveillance

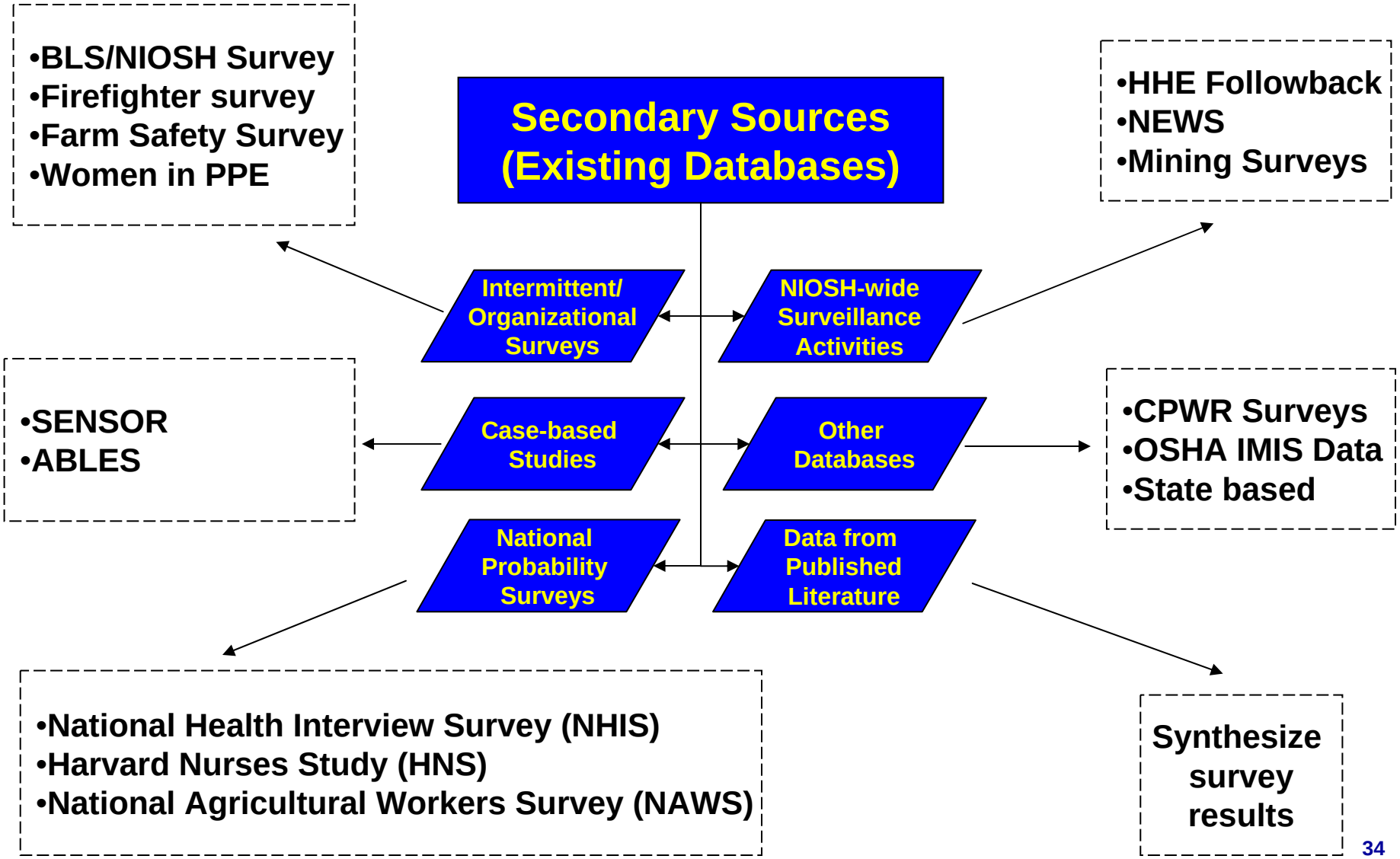
Current NIOSH PPT portfolio

- Consists of 2 dedicated research projects and input to several NIOSH activities
  - Approximately $300K funding for FY09
  - 1 FTE
- PPT emphasis is collaboration with intramural and extramural programs

Data Collection and Analysis will Use Secondary Sources, Pilot Studies, and Primary Data Collection



PPT Program Data Collection and Analysis will focus on assessing available secondary data sources



Current PPT Program Surveillance Activities

- **PPT Program Surveillance Planning**
- **PPE Surveillance Intervention Studies**
- **PPT Secondary Data Assessment by Sector**
- **Demonstration and Sentinel Surveillance System (Poster)**
- **Evaluation of OSHA IMIS Data (Poster)**
- **PPT Questions added to surveys**
  - National Health Interview Survey (NHIS) Occupational Health Supplement
  - Mining Intervention Survey
  - CPWR Telephone Survey

PPE Surveillance Intervention Studies

Objectives:

- Evaluate and identify methods to improve respirator use in the construction industry
- Evaluate use of respirators with other PPE
- Identify shortcomings of current programs and develop potential interventions
- Implement and evaluate interventions

Background:

- BLS/NIOSH Survey conducted in 2001

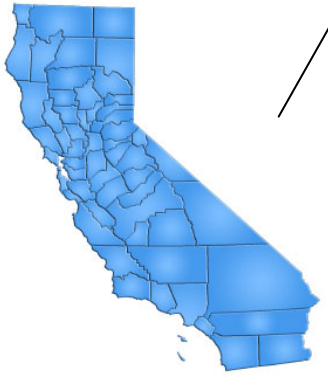
Status:

- Visited 4 NDA/2 large ARTBA sites
- Visited 3 small ARTBA companies, 7 pending
- Intervention strategies and effective construction programs may be leveraged to improve respirator use in other industries

PPT Secondary Data Assessment by Sector
Agriculture Sector

NATIONAL AGRICULTURAL WORKERS STUDY
NAWS
U.S. DEPARTMENT OF LABOR

SENSOR
Pesticides

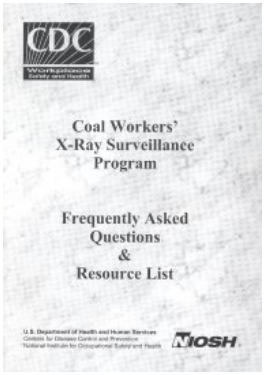


Initial assessment of PPT Knowledge Gaps in Agriculture

Additional PPT Data Collection and Analysis

PPT Surveillance Strategy

The near term surveillance plan will maximize use of secondary data sources



Secondary sources serve as primary data collection

Continue qualitative surveillance in construction industry

Categorize PPT/PPE Knowledge gaps

NIOSH NPPTL/PPT Program




Visit Us at: http://www.cdc.gov/niosh/programs/ppt/

http://www.cdc.gov/niosh/npptl

Disclaimer:

The findings and conclusions in this presentation have not been formally disseminated by the National Institute for Occupational Safety and Health and should not be construed to represent any agency determination or policy.

Thank you